Chemical Geology, 83 (1990) 339–340
Elsevier Science Publishers B.V., Amsterdam — Printed in The Netherlands

Contents Volume 83, 1990

Special Issue "Microanalytical Methods in Mineralogy and Geochemistry", by P.J. Potts, C. Dupuy and J.F.W. Bowles (Guest-Editors)

Introduction vi

Recent development in geochemical microanalysis
S.J.B. Reed (Cambridge, Great Britain) 1
Ion microprobe trace-element analysis of silicates: Measurement of multi-element glasses
R.W. Hinton (Edinburgh, Great Britain) 11
Applications of the high-resolution scanning proton microprobe in the Earth sciences: An overview
D.G. Fraser (Oxford, Great Britain) 27
Autoradiography by X-ray-excited optical luminescence (XEOL): Application to scheelite and fluorite mineralisation
P.J. Potts and A.G. Tindle (Milton Keynes, Great Britain) 39
Age dating of individual grains of uraninite in rocks from electron microprobe analyses
J.F.W. Bowles (Chesham, Great Britain) 47
Electron microprobe determination of minor and trace transition elements in silicate minerals: A method and its application to mineral zoning in the peridotite nodule PHN *1611*
C. Merlet and J.-L. Bodinier (Montpellier, France) 55
A preliminary investigation into the isotopic measurement of carbon at the picomole level using static vacuum mass spectrometry
S.J. Prosser, I.P. Wright and C.T. Pillinger (Milton Keynes, Great Britain) 71
A critical evaluation of two sample preparation techniques for low-level determination of some geologically incompatible elements by inductively coupled plasma–mass spectrometry
Kym E. Jarvis (Egham, Great Britain) 89
Inductively coupled plasma–mass spectrometric analysis of geological samples: A critical evaluation based on case studies
H.P. Longerich, G.A. Jenner, B.J. Fryer and S.E. Jackson (St. John's, Nfld., Canada) 105
Determination of the precious metals in geological materials by inductively coupled plasma–mass spectrometry (ICP–MS) with nickel sulphide fire-assay collection and tellurium coprecipiation
S.E. Jackson, B.J. Fryer, W. Gosse, D.C. Healey, H.P. Longerich and D.F. Strong
(St. John's, Nfld., Canada) 119
ICP–MS—A powerful tool for high-precision trace-element analysis in Earth sciences: Evidence from analysis of selected U.S.G.S. reference samples
G.A. Jenner, H.P. Longerich, S.E. Jackson and B.J. Fryer (St. John's, Nfld., Canada) 133

Special Issue "Development of Continental Crust through Geological Time", by B.K. Nelson and Ph. Vidal (Guest-Editors)

Preface ii

Isotopic evidence for crust–mantle evolution with emphasis on the Canadian Shield
G.R. Tilton and S.-T. Kwon (Santa Barbara, Calif., U.S.A.) 149
Pb isotope data from late Proterozoic subduction-related rocks: Implication for crust–mantle evolution
R.M. Ellam (Oxford, Great Britain), C.J. Hawkesworth and F. McDermott (Milton Keynes, Great Britain) 165
Growth and accretion of continental crust: Inferences based on Laurentia
K.C. Condie (Socorro, N.M., U.S.A.) 183

Nd and Sr isotopic compostions of lower-crustal xenoliths from north Queensland, Australia: Implications for Nd model ages and crustal growth processes
R.L. Rudnick (Mainz, Federal Republic of Germany) 195
Crustal evolution of the Hercynian belt of Western Europe: Evidence from lower-crustal granulitic xenoliths (French Massif Central)
H. Downes (London, Great Britain), C. Dupuy and A.F. Leyreloup (Montpellier, France) 209
Ultramafic rocks in the centre of the Vredefort structure (South Africa): Possible exposure of the upper mantle?
R.J. Hart (Johannesburg, South Africa), M.A.G. Andreoli (Pretoria, South Africa), C.B. Smith (Johannesburg, South Africa), M.L. Otter (Rondebosch, South Africa) and R. Durrheim (Johannesburg, South Africa) 233
Transfer of mantle fluids to the lower continental crust: Constraints from mantle mineralogy and Moho temperature
K. Bucher-Nurminen (Oslo, Norway) 249
Intracrustal recycling and upper-crustal evolution: A case study from the Pan-African Damara mobile belt, central Namibia
F. McDermott and C.J. Hawkesworth (Milton Keynes, Great Britain) 263
Sources of Hercynian granitoids from the French Massif Central: Inferences from Nd isotopes and consequences for crustal evolution
C. Pin and J.-L. Duthou (Clermont-Ferrand, France) 281
Isotopic evidence for the crustal evolution of the Frontenac Arch in the Grenville Province of Ontario, Canada
F. Marcantonio, R.H. McNutt, A.P. Dickin (Hamilton, Ont., Canada) and L.M. Heaman (Toronto, Ont., Canada) 297
A neodymium isotope study of plutons near the Grenville Front in Ontario, Canada
A.P. Dickin, R.H. McNutt and P.M. Clifford (Hamilton, Ont., Canada) 315
The 2-Ga peraluminous magmatism of the Jacobina–Contendas Mirante belts (Bahia, Brazil): Geologic and isotopic constraints on the sources
P. Sabaté, M.M. Marinho (Salvador, Bahia, Brazil), Ph. Vidal and Michelle Caen-Vachette (Clermont-Ferrand, France) 325

Contents Volume 83, 1990 339